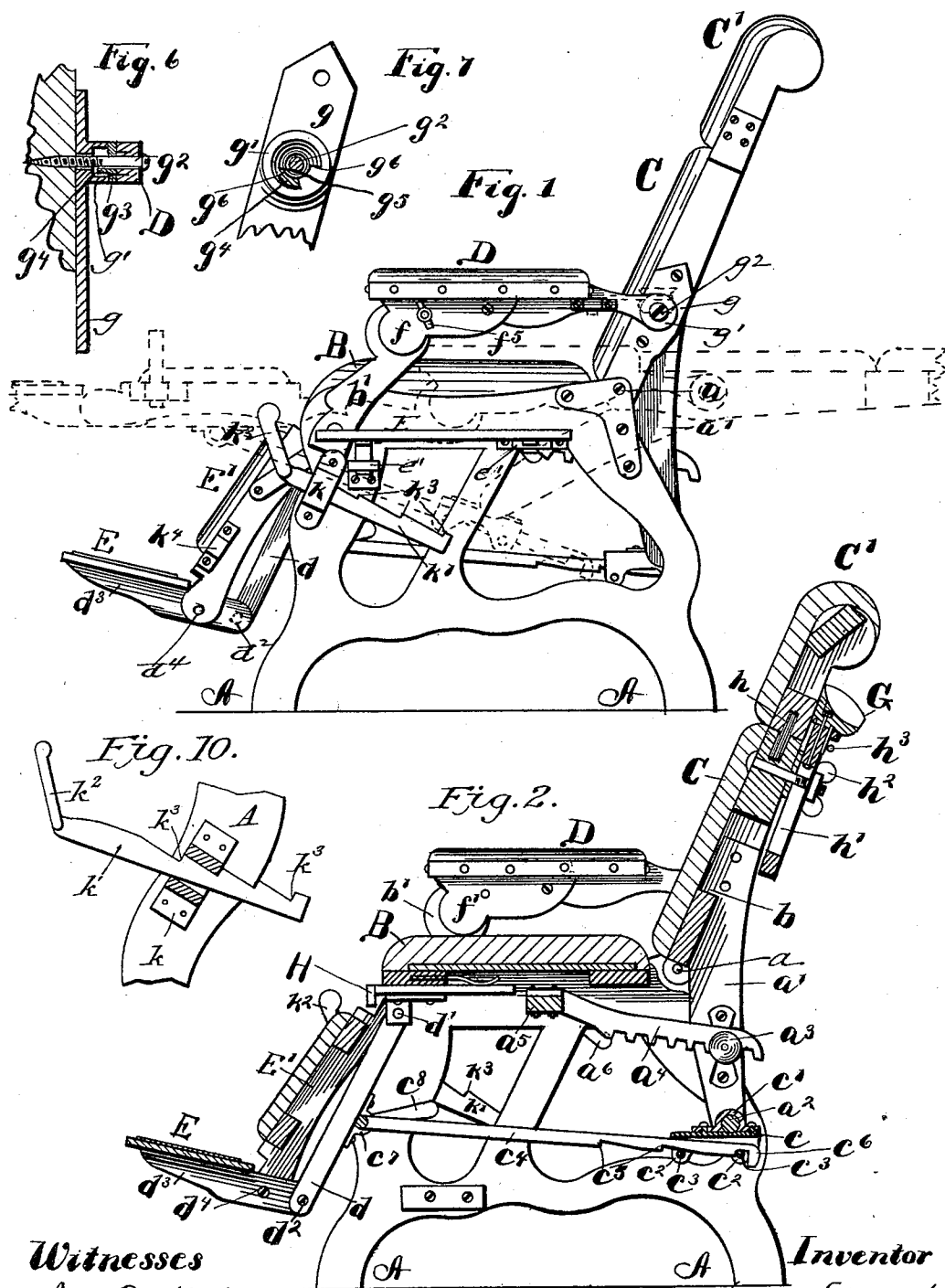


S. LONGANECKER.
PHYSICIAN'S OPERATING CHAIR.

No. 481,040.

Patented Aug. 16, 1892.



Witnesses
Ira C. Hoehns.
Frank Watt.

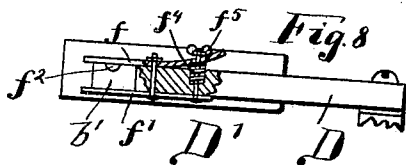
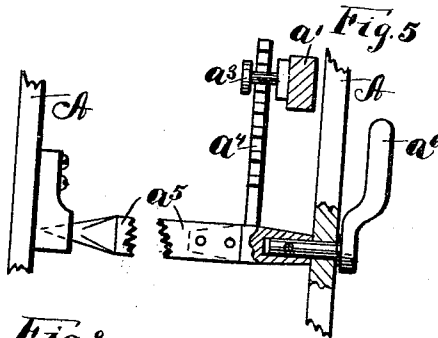
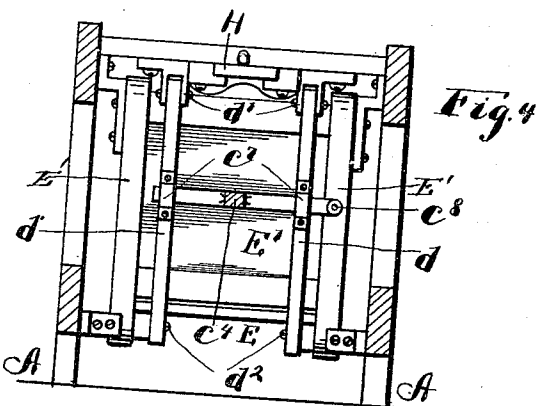
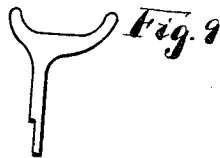
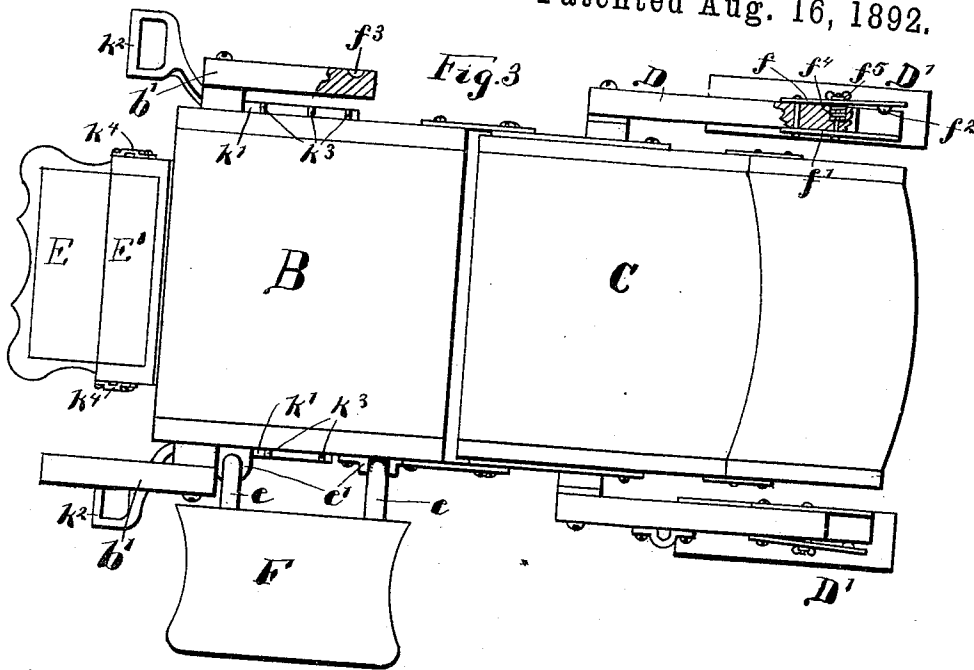
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UNITED STATES PATENT OFFICE.

SAMUEL LONGANECKER, OF TROY, OHIO.

PHYSICIAN'S OPERATING-CHAIR.

SPECIFICATION forming part of Letters Patent No. 481,040, dated August 16, 1892.

Application filed October 19, 1891. Serial No. 409,182. (No model.).

To all whom it may concern:

Be it known that I, SAMUEL LONGANECKER, a citizen of the United States, residing at Troy, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Physicians' Operating-Chairs, of which the following is a specification.

My invention relates to improvements in adjustable chairs especially adapted for use for surgical and other operations by physicians.

The object of my invention is to provide a chair which may be easily and readily adjusted to any desired position for use in surgical operations, examinations, &c. I attain these objects by the constructions shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a chair embodying my invention. Fig. 2 is a sectional elevation of the same. Fig. 3 is a plan view of the same shown partly extended and with the arms turned back to the position occupied when the table is in use, as shown in said view. Fig. 4 is a detailed view of the leg and foot rest, showing the method of hinging the same. Fig. 5 is a detail of the adjustable locking mechanism for holding the chair in different positions, the view being a bottom plan with some of the parts shown in section. Figs. 6 and 7 are detail views of the pivot and stop devices used on the adjustable arms. Fig. 8 is a detail view showing a modification of the detachable holding devices used in connection with said arms. Fig. 9 is a detail view of the detachable auxiliary leg-support. Fig. 10 is a detail view of the foot-stirrups and their supporting-yokes.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, A A represent the framework, constituting the base of the chair, which is surmounted at the top by a seat B. Pivoted at *a* to the top and rear of the base A A is the back C, provided at each side with downwardly-projecting arms *a'*, connected together at the bottom and below the seat B by a connecting round or rung *a²*. Secured to one or both of the arms *a'* is a stud *a³*, adapted to engage in a notched lever *a⁴*, secured to an oscillating bar *a⁵*, which extends

across the base A A near the top and directly under the seat B, said bar *a⁵* being journaled at each end in suitable bearings on the frame or base A A, as shown in Fig. 5. A handle *a⁶* furnishes the means for oscillating the bar *a⁵*, and thus raising the notched lever *a⁴* out of engagement with the stud *a³* on the arm *a'*. To the back C is pivoted the chair-arms D, which are also pivotally connected at their front ends to supporting-pieces *b'*, pivoted or hinged to the frame or base A A, so that as the back C is turned on its pivotal centers *a*, the arms D, moving on their pivotal centers, are lowered to the sides of the seat B. Journaled on the round or cross-bar *a²*, connecting the arms *a'* of the back C, is a trough-shaped metallic locking-piece *c*, formed with an eye or sleeve *c'*, which encircles the rung *a²* and formed on the opposite sides with downwardly-projecting flanges or ears *c²*, connected together by small transverse rods *c³*. Extending through this piece *c*, between the respective ears *c²* and above the cross-rods *c³*, is a connecting-bar *c⁴*, having a series of notches *c⁵*, adapted to engage with the respective rods *c³*, and provided at the end with a downwardly-projecting flange or lip *c⁶*, which limits its passage through the trough-shaped piece *c* in a forward direction. The end of the connecting-bar *c⁴* is pivotally connected to parallel bars *d*, hinged at their upper ends at *d'* to the lower side of the seat B and pivotally connected at their lower ends at *d²* to the projecting arms *d³* of the foot-rest E. The foot-rest E is pivoted at *d⁴* to the side pieces of the leg-support E', which in turn is hinged below the bottom of the seat B to the base A A in a different horizontal plane from the pivotal connections *d'* of the parallel bars *d*, so that as the parallel bars *d* are pressed forwardly the leg-support E' is raised, so as to approach a horizontal position, while at the same time the foot-support E is caused to change its angular position with reference to the leg-support, so as to become practically a continuation of the leg-support E' when said leg-support is moved to a horizontal position. It will be seen from the description that by raising the notched lever *a⁴* through the medium of the handle *a⁶* the back C may be lowered to different angular positions with

the seat B, while at the same time the leg-support E' will be correspondingly raised by the lowering of the back C, tending to bring all the parts to a horizontal position and in line with the seat B.

The connecting-bar c^4 , which connects the back to the leg-support is formed with a T-shaped head at its front end, the projecting ends thereof being journaled in bearings c^7 on the parallel bar d . One of the extremities of the T-shaped head is provided with a projecting handle or crank c^8 , so that by turning said handle the rear end of the connecting-bar will be raised, thus oscillating the locking-piece c until the notches c^5 clear the cross-
 15 rods c^3 , the bar c^4 and locking-piece c being in this position in the same horizontal plane, thus permitting the leg and foot supports to be adjusted with reference to the back and within certain limits independent thereof, the locking-piece c and the bar c^4 being adapted
 20 by gravity to assume an angular position with reference to each other, which will cause the notches in said bar to engage the cross-pieces of said locking-piece when the handle c^8 is released.

At one side of the chair I provide a removable support or table F, formed with L-shaped projecting arms e , adapted to engage in suitable ears or sockets e' , secured to the side of the base of frame A A in such a position that the top of the table F shall stand about two and one-half or three inches below the top of the seat B. When in proper position, I also
 35 provide the hinged arms D with a detachable connection D' between the end of said arm and the supporting-piece b' . This detachable connection is preferably formed of two projecting plates ff' , connected to the side of the arm proper and adapted to embrace the
 40 top of the supporting-piece b' , one of said plates f' being rigidly connected to the arm and the other f being movably secured thereto and provided with a projecting teat f^2 , adapted to engage in a conical-shaped opening f^3
 45 near the top of the supporting-piece b' . The movable plate f is normally forced outwardly by a spring f^4 , but is adapted to be forced inwardly by a thumb-nut f^5 on the end of a
 50 bolt, which extends through said arm and spring, so that by unscrewing said nut the plate f is pushed outwardly by the spring f^4 until the teat f^2 is removed from the conical opening f^3 , as shown in Fig. 3.

In the modifications shown in Fig. 8 the same parts are employed for detachably connecting the arm as are shown in Fig. 3. The removable plate f , however, is fulcrumed near the middle in the form of a lever with the
 55 pivot projection f^2 on one side of said fulcrum and the spring f^4 on the other side. In this construction the spring holds the parts normally connected, an inward movement of the spring end of the plate f producing an
 65 outward movement of the pivot end thereof to disconnect the parts.

The pivotal connection between the arm D and the back C is shown in Figs. 6 and 7. A metallic plate g , having a projecting boss g' , is secured to the side of the back C. The arm D is connected to the back by a screw g^2 , which passes through said arm and through the boss g' . The arm D is also provided with metallic wearing plate or boss g^3 , which rests in contact with the top of the boss g' and is provided with a projecting stud g^4 , which enters a curved recess g^5 in said boss, said projection being adapted as the arm is turned to its limit in either direction to contact with
 75 shoulders g^6 at the respective ends of the curved recess g^5 and form a stop for said arm.

In order to adapt the chair for dental purposes or for examination of the throat, I construct the back C in two parts C C', the upper part C' being removably secured to the lower part by dowel-pins h , connected to the upper removable part and adapted to project into openings in the lower part. At or near the junction between the respective parts I place an adjustable head-rest G, provided with a slotted supporting-standard h' and fastening-screw h^2 to hold it in different positions. The head-rest G is pivotally secured to the supporting-standard h' , so as to turn axially thereon, a small sliding bolt or latch
 85 h^3 on the back C being adapted to engage and hold the said head-rest in either position on the supporting-standard. This head-rest, it will be understood, is independent of the ordinary roll-head support formed at the top of the upper portion of the back and is adapted for use only when the upper removable portion of the back is detached. When not in use, the upper portion or the head-rest proper is turned back, as shown in Fig. 3, and held
 95 in this position by the latch h^3 , in which position it forms an additional support for the upper part C' of the back. When the upper portion of the back is removed, the head-rest is revolved on its pivotal center, bringing it in a proper position for use, with the front part thereof projecting slightly over the back C.

On each side of the frame or base A A, slightly below the seat B, I place metallic yokes k , adapted to receive the stems k' of the foot-stirrups k^2 . These stirrups are so formed as to project from one side of the stems k' , as shown in Fig. 3, the stem being provided with notches k^3 , adapted to engage the yokes k , by which the stirrups may be held in different positions of adjustment within the yokes k , as shown in Fig. 10. The stirrups are also removable or reversible. Thus the stirrups may be used on opposite sides of the chair, so as to turn inwardly over the leg-support, or they may be reversed in the respective yokes, so as to turn downwardly instead of upwardly. I also provide on the side of the leg-support E' a yoke k^4 , adapted to receive the end of a Y-shaped supporting-piece, (shown in detail in Fig. 9,) this Y-shaped piece being
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adapted to receive and support the leg of a patient in dressing or bandaging the same, or for other purposes.

The chair as thus described may be adjusted to almost any desired position for surgical operations, the adjustments being accomplished by mechanism in convenient reach of the operator.

By the use of a table the top of which is placed some inches lower than the seat proper and by the hinged and detachable arms a convenient adjustment of the chair may be secured for the Sims position, the feet of the patient being lowered on the table, tending to throw forward the rectum without side tilt of the chair. By the use of the detachable back and reversible head-rest secured to the chair proper the chair is adapted for all the purposes of the ordinary dental chair. The detachable back is also adapted for use as an elevating cushion or pillow on the seat proper when the patient is placed face downward with his abdomen resting on said seat for rectal or similar treatment.

Immediately under the seat B and between the same and the leg-support E', I provide a sliding tray H, adapted, when not in use, to slide under said seat out of the way, but so arranged as to be drawn forward and support the pan or basin immediately in front of the seat in surgical operations on the anus or rectum in the position last indicated.

It is obvious that the devices herein described admit of modifications in the mechanical constructions. I do not, therefore, limit myself to the exact constructions described; but

I claim as my invention—

1. In a chair, a base or frame surmounted by a seat, a back pivoted to the rear of said base and having projections which extend below the pivotal point, a trough-shaped connecting-piece *c*, pivotally connected to the lower extremities of said projections, a leg-rest pivoted to the front of said base, and a foot-rest pivoted to said leg-rest and through the medium of bars *d* to said base, and a connecting-bar *c*⁴, hinged to the rear of the bars *d* and provided with notches *c*⁵, adapted to engage

with rods *c*² on said trough-shaped connecting-piece *c*, substantially as and for the purpose specified.

2. In a chair, a base surmounted by a seat, a back pivotally connected thereto and having projections extending below the pivotal point and connected to a cross-bar, a connecting-piece *c*, pivoted to said cross-bar, a locking-lever pivoted to said frame and provided with notches adapted to engage with a stud on one of said projections, a handle connected to said locking-lever, leg and foot rests pivoted to the front of said frame, and a connecting-bar *c*⁴, pivoted at one end to the bars *d* and at the other adapted to engage with the connecting-piece *c*, said connecting-bar being provided with a handle *c*⁸ for adjusting the same, substantially as specified.

3. In a chair, the combination, with the base and pivoted back, of the arms pivoted to said back and the arm-supports pivoted to said base, a detachable pivot connection between the front ends of said arms and the top of the pivoted arm-supports, and stop projections to limit the movement of said arms with relation to said back, substantially as and for the purpose specified.

4. In an adjustable chair having a base and seat and a pivoted back connected to said base, hinged arms and arm-supports, each pivoted at one end to the back and base, respectively, and at their opposite ends connected together by a detachable pivot connection, stop projections on said arms and back to limit the movement of said arms with relation to said back, and a side support or table on said base adjacent to said seat and normally divided therefrom by said arm and arm-support, said table being adapted to form substantially a continuation of said seat when the arm and arm-support are detached and adjusted about their pivotal connection, substantially as specified.

In testimony whereof I have hereunto set my hand this 12th day of October, A. D. 1891.

SAMUEL LONGANECKER.

Witnesses:

ELLIS H. KERR,
WM. E. HARNESS.